AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A gradient coil assembly for a magnetic resonance imaging system suitable for generating images of a person comprising:

at least two gradient coils and a nonconducting tubular substrate for the support thereof, the coils being sized so as to generate a magnetic field suitable for magnetic resonance imaging, the coils comprising:

at least one conductor having a bonding surface mechanically bonded ~~via a~~ to the nonconducting tubular substrate;~~and~~

wherein ~~a~~ the bonding surface ~~of the at least one conductor~~ has been subjected to a surface treatment to improve the mechanical bonding properties of the bonding surface to the nonconducting tubular substrate; and

wherein a bonding resin is disposed between the treated bonding surface and the nonconducting tubular substrate, the combination of the treated bonding surface and the bonding resin in the coil assembly having an improved bond strength as compared to a coil assembly being absent the treated bonding surface.

2. (original) The gradient coil assembly of claim 1, wherein the surface treatment provides a surface of microscopic dendritic structures to the bonding surface of the at least one conductor.

3. (original) The gradient coil assembly of claim 1, wherein the surface treatment provides a black oxide coating on the bonding surface of the at least one conductor.

4. (original) The gradient coil assembly of claim 1, wherein the surface treatment provides a red oxide coating on the bonding surface of the at least one conductor.

5. (original) The gradient coil assembly of claim 1, wherein the surface treatment provides a brown oxide coating on the bonding surface of the at least one conductor.

6. (original) The gradient coil assembly of claim 1, wherein the at least one conductor is a copper conductor.

7. (original) The gradient coil assembly of claim 1, wherein the at least one conductor is a saddle coil.

8. (canceled)

9. (currently amended) A magnetic imaging system suitable for generating images of a person comprising:

a system controller;

a gradient amplifier unit in operable communication with the system controller;

a magnetic assembly in operable communication with the gradient amplifier, the magnetic assembly comprising:

a gradient coil assembly comprising at least two gradient coils and a nonconducting tubular substrate for the support thereof, the coils being sized so as to generate a magnetic field suitable for magnetic resonance imaging, the coils comprising:

at least one conductor having a bonding surface mechanically bonded ~~via a~~ to the nonconducting tubular substrate;~~, and~~

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wherein a the bonding surface ~~of the at least one conductor~~ has been subjected to a surface treatment to improve the mechanical bonding properties of the bonding surface to the nonconducting ~~nonconductint~~ tubular substrate; and

wherein a bonding resin is disposed between the treated bonding surface and the nonconducting tubular substrate, the combination of the treated bonding surface and the bonding resin in the coil assembly having an improved bond strength as compared to a coil assembly being absent the treated bonding surface.

10. (original) The magnetic imaging system of claim 9, wherein the surface treatment provides a surface of microscopic dendritic structures to the bonding surface of the at least one conductor.

11. (original) The magnetic imaging system of claim 9, wherein the surface treatment provides a black oxide coating on the bonding surface of the at least one conductor.

12. (original) The magnetic imaging system of claim 9, wherein the surface treatment provides a red oxide coating on the bonding surface of the at least one conductor.

13. (original) The magnetic imaging system of claim 9, wherein the surface treatment provides a brown oxide coating on the bonding surface of the at least one conductor.

14. (original) The magnetic imaging system of claim 9, wherein the at least one conductor is a copper conductor.

15. (original) The magnetic imaging system of claim 9, wherein the at least one conductor is a saddle coil.

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16. (original) The magnetic imaging system of claim 9, wherein the at least one conductor is mechanically bonded to at least one coil.

17. (currently amended) A method for assembling a gradient coil assembly for use in a magnetic resonance imaging system suitable for generating images of a person, the method comprising:

treating a bonding surface of at least one conductor of a gradient coil; and

bonding the bonding surface of the at least one conductor to a nonconducting tubular substrate using a bonding resin such that the combination of the treated bonding surface and the bonding resin in the coil assembly has an improved bond strength as compared to a coil assembly being absent the treating of the bonding surface.

18. (original) The method for assembling a gradient coil assembly of claim 17, wherein the treating of a bonding surface provides a surface of microscopic dendritic structures to the bonding surface of the at least one conductor.

19. (original) The method for assembling a gradient coil assembly of claim 17, wherein the treating of a bonding surface provides a black oxide coating on the bonding surface of the at least one conductor.

20. (original) The method for assembling a gradient coil assembly of claim 17, wherein the treating of a bonding surface provides a red oxide coating on the bonding surface of the at least one conductor.

21. (original) The method for assembling a gradient coil assembly of claim 17, wherein the treating of a bonding surface provides a brown oxide coating on the bonding surface of the at least one conductor.

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22. (new) The gradient coil assembly of Claim 1, wherein:

the nonconducting tubular substrate comprises a plurality of grooves; and

the treated bonding surface of the coil conductor is mechanically bonded to the grooves via a bonding resin such that the combination of the grooves, the treated bonding surface, and the bonding resin in the coil assembly has an improved bond strength as compared to a coil assembly being absent the treated bonding surface.

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